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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/538,706

11/21/2005

Stephane Melen

Serie 6084

3780

40582

7590

02/20/2008

AIR LIQUIDE

Intellectual Property

2700 POST OAK BOULEVARD, SUITE 1800

HOUSTON, TX 77056

EXAMINER

BUSHEY, CHARLES S

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

02/20/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/538,706	Applicant(s) MELEN ET AL.	
	Examiner Scott Bushey	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-16 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13 is/are allowed.
- 6) ☒ Claim(s) 9-11 and 14-16 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 December 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings were received on December 14, 2007. These drawings are unacceptable. Although the drawings included the phrase "Prior Art", as required by the previous Office action, they are not acceptable since they omitted the label "Replacement Sheet", as required by paragraph 1 on page 2 of the previous Office action.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 9-11, and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bouquet et al taken in view of either Roland or Jounela et al.

Bouquet et al (Fig. 1) substantially disclose applicant's invention as recited by instant claims 9-11, and 14-16, except for the lower disk of the impeller having less surface area than the upper disk of the impeller, the lower disk being of a smaller diameter than the upper disk, but of a size equal to or greater than the annular space formed by the central hole in the upper disk.

Roland ((Figs. 1 and 3) or Jounela et al (Fig. 4) each disclose radial vaned impellers with upper and lower disks, wherein the lower disk has a smaller diameter and thus a smaller surface area than the upper disk. The lower disk of each of the alternative secondary references is further of a diameter that is greater in size than the central opening in the upper disk. It would have been obvious for an artisan at the time of the invention, to modify the impeller disks of Bouquet et al, to have a smaller lower disk that was at least as large as the central hole in the upper disk, in view of either Roland or Jounela et al, since such would influence the flow of the gas loaded liquid toward the bottom of the vessel, thereby increasing the residence time of the gas within the liquid by countering the buoyant tendency of the gas bubbles in the gas/liquid mixture.

Allowable Subject Matter

5. Claim 13 is allowed over the prior art of record for the reasons of record.
6. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments, see the first full paragraph on page 8 of the amendment, filed December 14, 2007, with respect to the rejection of claim 12 (pertaining to the lower disk being partially cut out) have been fully considered and are persuasive. The rejection of claim 12 has been withdrawn.

8. Applicant's arguments filed December 14, 2007, relative to claims 9-11, and 14-16 have been fully considered but they are not persuasive.

The arguments directed to the combination of Bouquet et al taken in view of either Roland or Jounela et al, as applied to claims 9-11, and 14-16 are not found to be persuasive, since the secondary references were not applied to suggest that the upper disk be substantially planar. Clearly, Bouquet et al teaches such, the slight upstanding rim at the inner edge of the upper disk falling within the meaning of "substantially planar". As stated in the rejection statement, Roland and Jounela et al have been applied in the alternative to modify the lower disk of the impeller of Bouquet et al to be of smaller area than the upper disk, thereby countering the buoyant tendency of the gas-laden liquid from rising immediately at the outer edges of the impeller vanes. While the upper disk of Jounela et al incorporates downwardly extending outer edges, it is not considered to teach away from the substantially planar upper disk of Bouquet et al. Furthermore, even if one could not agree with the combination of Bouquet et al with the Jounela et al reference, due to the downturned edges of the upper disk of Jounela et al, Roland suggests no such downturned edge, and thus applicant's argument made against Jounela et al would not apply to the combination of Bouquet et al and Roland.

With respect to the argument against Bouquet et al taken in view of Roland, such is not at all persuasive, since it essentially states that one having ordinary skill in the art would not reasonably expect a gas-liquid stream, having buoyant tendencies due to the gas content thereof, flowing from an impeller with a larger, overhanging upper disk than lower disk, to be prevented from flowing upwardly as quickly as an impeller having upper and lower disks of the same size. As such the Examiner simply cannot agree and the rejection based upon Bouquet et al taken in view of Roland must stand.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Bushey whose telephone number is 571 272-1153. The examiner can normally be reached on M-Th 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Scott Bushey
Primary Examiner
Art Unit 1797

csb
2-14-08

/Scott Bushey/
Primary Examiner, Art Unit 1797

/S. B./

<i>Application Number</i> 	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/538,706	MELEN ET AL.	
	Examiner	Art Unit	
	Scott Bushey	1797	